

Scents and Indoor Air Quality

The word “fragrance” usually conjures up the idea of a pleasant scent, maybe a favorite perfume or laundry detergent. But we often forget that these scents are also the result of a complex mixture of volatile organic chemicals (VOCs). These chemicals evaporate into the air, creating a scent, which is why we can smell them.

Thousands of natural and synthetic chemicals are used in scents; some of them are proven irritants, toxins, allergens, reproductive toxins, or even carcinogens (i.e. paradichlorobenzene, toluene, benzene, aldehydes, ketones, phtalates, naphthalene, and hexene). It also has been found that there is an additive and probably synergistic, or strengthening, effect when multiple allergens are used together.

Aside from scents used in perfumes, personal care products, laundry detergents, cleaners, and scented markers, there is an increase in the use of indoor “air fresheners” in schools and offices, such as scented candles, plug-in or spray air fresheners, potpourri, scented oils, scent diffusing reeds, and scented wipes for cleaning hands and surfaces. The expression “air freshener” suggests that these products improve air quality. In reality, the opposite is true.

Problems associated with the use of scents are:

- **Poor Indoor Air Quality (IAQ).** The VOCs emitted by scented products can contribute to poor IAQ and may cause a variety of adverse health effects such as headaches, respiratory and skin irritation, asthma attacks, nausea, neurotoxic symptoms, or even cancer and reproductive damage.
- **Hidden Problems.** Scents only mask an unpleasant odor, which means that they are also masking the real problem, such as lack of proper ventilation, malfunction of the heating and/or ventilation units, lack of proper cleaning, or the presence of mold and bacteria.
- **Sensitivity.** In a school environment, districts have to be conscious of both staff and students’ personal sensitivities, needs, and preferences.
- **Safety Hazards.** In addition to releasing smoke and soot into the environment, scented candles can also be fire hazards.

A growing number of institutions and agencies, including the Puget Sound ESD, have instituted policies that require personnel to limit the use of fragrances, volatile organic compounds, and other sources of chemicals that pose a risk to human health.

The American Lung Association encourages organizations to establish fragrance free policies as one of their main components of creating a “[Lung Healthy Work Environment](#).” They note that “fragrances can and do affect indoor air quality,” as well as posing health hazards for employees with allergies and chronic lung diseases. The ALA provides several resources for establishing such a policy on their [website](#).

In establishing a fragrance-free policy, agencies aim to reduce health risks for persons with sensitivities, allergies, asthma and other pre-existing conditions, and to enhance IAQ for everyone.

If a classroom or office has poor IAQ, we need to investigate the root cause of the problem and plan for remediation. Please limit your use of personal fragrances, eliminate “air fresheners,” and contact the Puget Sound Workers’ Compensation Trust’s Industrial Hygiene Consultant (206-200-4463) for IAQ-related support.

Some supporting data:

- A survey of asthmatics found that 72% were triggered by perfumes and/or colognes;
- A review of the literature by the Institute of Medicine placed exposure to fragrances in the same category as exposure to secondhand smoke and formaldehyde in regards to triggering and exacerbating asthma attacks in adults and children;
- In 1986 the National Academy of Sciences targeted fragrances as one of the six categories of chemicals that should be given high priority for neurotoxicity testing. The other categories were insecticides, heavy metals, solvents, food additives, and certain air pollutants.
- The number of chemically sensitive people is continuously increasing. Experts predict that the 5-10% of the population currently allergic to chemicals will grow to 60% by the year 2020;
- The toxicity of an air freshener was evaluated by allowing mice to breathe the emissions from a commercially available solid air freshener for one hour. This caused sensory and pulmonary irritation, a decrease in respiratory efficiency, and abnormalities of behavior;
- Soot produced by certain candles may exceed concentrations allowed for outside air by the Environmental Protection Agency.

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